ABSTRACT OF THE DISCLOSURE

The fluid flow rate within a microfluidic passageway of a microfabricated device is determined by measuring the time-of-flight of a heat pulse coupled into the fluid. Since the propagation velocity of the heat trace is generally slower than the mean flow rate of the flow, additional processing provides the appropriate scaling needed to obtain an accurate fluid flow rate measurement. The scaling factor is based on the geometry of the structure and the thermal properties of the fluid and the materials used for the device.